A.D. 1874, 4th December. N° 4192.

SPECIFICATION

OF

FRANK WIRTH.

SYRINGES.

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A.D. 1874, 5th December. N° 4192.

Syringes.

(*This Invention received Provisional Protection only.*)

PROVISIONAL SPECIFICATION left by Frank Wirth at the Office of the Commissioners of Patents, with his Petition, on the 5th December 1874.—A communication from Josef Leiter, Manufacturer, residing at Vienna, in the Empire of Austria.

I, Frank Wirth, of the Firm of Wirth & Co., Patent Agency, of Frankfort on the Main, in the Empire of Germany, do hereby declare the nature of the said Invention for "Improvements in Syringes," a communication, to be as follows:—

Thus far subcutaneous injections were made by piercing a small pipe (canule) with a lancet point into the cellular tissue of the human skin, the liquid to be injected being squirted in by means of a small syringe. As now the slower or quicker piercing by means of the pressure of the hand, and the injection of the liquid is always a painful proceeding which must mostly be done by the physician, it is for both patient and physician of the greatest importance to use another than the ordinary instrument by which the inconveniences mentioned may be avoided.

In the following such an apparatus shall be described:—I use a small syringe which can be slid in a cylindrical tube after taking off another tube. When a spiral spring is pressed and then let loose at once the syringe is thrown forward; this spring may be fixed by drawing out the handle. The tube last mentioned is provided with a smaller opening than the diameter of the cylinder of the syringe, so that the latter is not pushed forward further than to the end of the said tube. But in order that I may regulate how deeply the small tube shall enter into the skin, a tube with a funnel-like end can be slid on the said tube. By this form an oblique direction can be given to the instrument so that the needle will not enter into the flesh but merely under the skin.

When the syringe is filled it is propelled forward by letting loose the aforesaid spring, hence the lancet is thrust into the skin; the syringe now finds a resistance and the force of the spring will push the piston forward, and thus the liquid is injected. If the syringe is for instance filled only to one-third the manipulation is the same; but on the other hand it may happen that several injections must be made from a filled syringe. To this end the piston rod is provided with a screw thread on which a female screw is provided. The rod being divided in 10 parts the respective quantity of liquid is ejected by turning the screw to the division line in question. That in the manner described a perfectly painless injection takes place is proved by the fact that the accidental and quick piercing of a needle or even of a blunt instrument is seldom perceived.

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